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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,157	03/08/2001	Robin Bhagat	MLF-650-17	6189
23309	7590	04/06/2004	EXAMINER	
BOOTH & WRIGHT LLP P O BOX 50010 AUSTIN, TX 78763-0010			PHAN, RAYMOND NGAN	
			ART UNIT	PAPER NUMBER
			2111	5

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,157

Applicant(s)

BHAGAT, ROBIN

Examiner

Raymond Phan

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7 and 9-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 9-12, 14-17 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 5, 13, 18 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Part III DETAILED ACTION

Notice to Applicant(s)

1. This action is responsive to the following communications: amendment filed on January 27, 2004.
2. This application has been examined. Claims 1-5, 7, 9-23 are pending.
3. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2111.

Specification

4. The title of the invention is accepted.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 7, 9-12, 14-17, 19-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cottle et al. (US No. 6,263,396) in view of Applicants Admitted Prior Arts (aka AAPA).

In regard to claims 1, 7, 9, 14, 19, Cottle et al. disclose the single IC comprising a synthesizable microcontroller processor core connected to the

program code and able to selectively process one of the two different program execution streams (i.e. ARM (32-bit) and THUMB (16-bit)) (see col. 65, line 59 through col. 68, line 47), and wherein the program-execution interrupt request forces a hardware switch to a first of the two different program execution streams (see col. 65, line 59 through col. 68, line 47); an interrupt controller for receiving peripheral interrupt requests from the variety of system interrupt sources, and providing for the interrupt request to the core from a programmable combination of the peripheral interrupt requests (see col. 65, line 59 through col. 68, line 47); and an interrupt service routine preamble (see col. 65, line 59 through col. 68, line 47); wherein the second of the two different program execution streams is more economical with program code space, so the interrupt service routine preamble is coded in the second of the two different program execution streams to cause a switch, and is shared amongst a plurality of interrupt service routines (see col. 65, line 59 through col. 68, line 47). But Cottle et al. do not specifically disclose the execution of a particular instruction is required to switch back to a second of the two different program execution streams. However AAPA discloses the execution of a particular instruction (i.e. BX instruction) is required to switch back to a second of the two different program execution streams (see page 2). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of AAPA within the system of Cottle et al. because it would provide a higher performance.

In regard to claims 2, 10, 15, 20, Cottle et al. disclose the interrupt controller providing a fast interrupt request (FIQ) and normal interrupt request (IRQ) to be programmably masked and prioritized before being issued to the core, and wherein

the FIQ directs program execution to a last entry in the interrupt vector table (see col. 18, lines 42-51).

In regard to claims 3, 11, 16, 21, Cottle et al. disclose the interrupt controller centralizes all interrupt handling and included programmable interrupt masks for independent enabling and disabling each interrupt source, and globally disabling all interrupts (see col. 65, line 59 through col. 68, line 47).

In regard to claims 4, 12, 17, 22, Cottle et al. disclose the interrupt controller further includes an interrupt vector control for automatically decoding a highest-priority interrupt for presentation of a programmed interrupt vector to the processor core (see col. 5, lines 29-49).

Allowable Subject Matter

7. Claims 5, 13, 18, 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is an Examiner's statement of reasons for the indication of allowable subject matter: Claims 5, 13, 18, 23 are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior arts which teach an interrupt controller includes a global-disable control bit for use when a critical portion of program code is executing that is independent of any individual interrupt masks and avoid needing to save and restore mask states that would otherwise increase interrupt latency when a global-disable is lifted.

Response to Arguments

9. In view of remark filed on January 21, 2004, claims 1-4, 7 have been fully considered but they are not deemed to be persuasive.

Applicant(s) argue that ...Cottle et al. fail to teach to using the shared ARM-encoded interrupt service routine preamble to put the ARM core into THUMB mode to execute a THUMB-encoded interrupt service routine... (page 11). The Examiner does not agree. Cottle et al. teach the interrupt service routine is coded in the first program execution stream to cause the hardware switch to the second program execution stream (see col. 65, line 59 through col. 68, line 47).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., using the shared ARM-encoded interrupt service routine preamble to put the ARM core into THUMB mode to execute a THUMB-encoded interrupt service routine) are not recited in the rejected claims, 1, 9, 14, 19. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Glens*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

10. Claims 1-4, 7, 9-12, 14-17, 19-22 are rejected. Claims 5, 13, 18, 23 are objected.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY

Art Unit: 2111

ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (703) 306-2756. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Primary, Paul Myers can be reached on (703) 305-9656 or via e-mail addressed to paul.myers@uspto.gov. The fax phone number for this Group is (703) 746-7239.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [raymond.phan@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.



PAUL R. MYERS
PRIMARY EXAMINER



Raymond Phan

4/3/04